

# 6-Week DASH Diet Intervention To Reduce Blood Pressure Among University Staff

Ruth Mary Ninan, Dr Daniel McCartney,  
Technological University Dublin



## Introduction

- **Cardiovascular disease (CVD)** is the leading cause of global mortality, causing 17.9 million deaths each year<sup>1</sup>.
- **Hypertension** is a modifiable risk factor for CVD, affecting 64% of individuals aged 50 and over in Ireland<sup>2</sup>.
- **Dietary Approaches to Stop Hypertension (DASH) diet** is an eating plan that emphasizes fruits, vegetables, whole grains, low-fat dairy, lean proteins, nuts, and seeds while limiting intake of foods high in saturated fat, sodium, and added sugars<sup>3</sup>.
- It is an effective strategy to **reduce blood pressure (BP) in hypertension** and subsequently lower the risk of CVD<sup>4</sup>.
- In addition, the **DASH diet can improve lipid profiles, and reduce inflammation**<sup>5</sup>.

## Aims

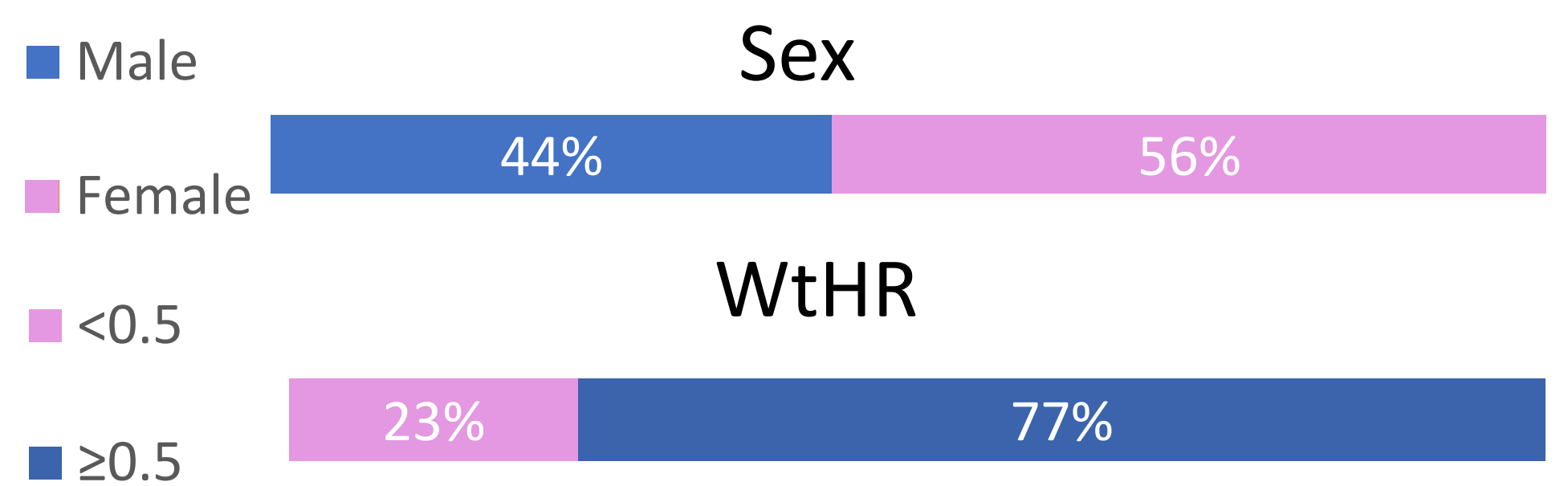
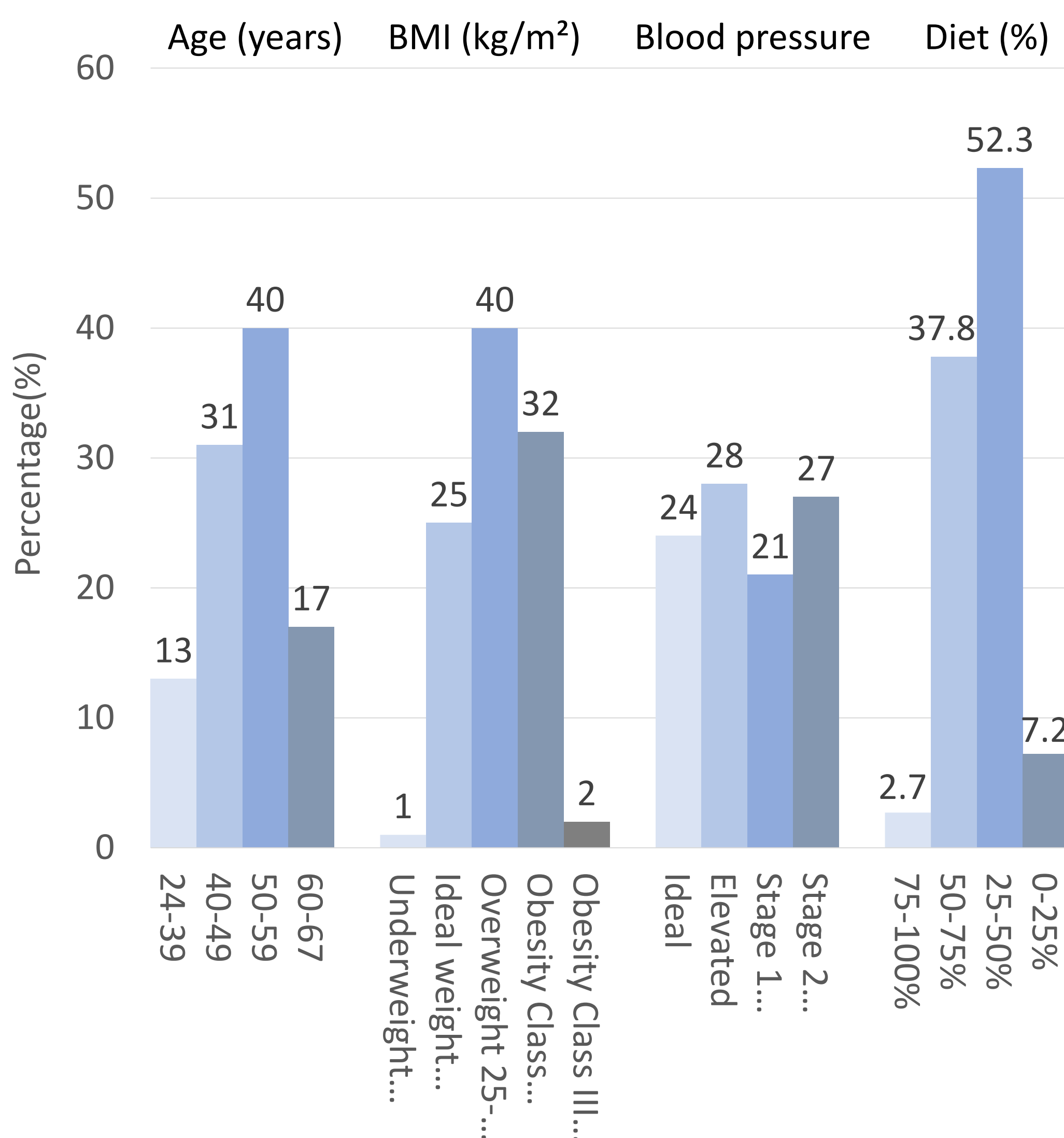
- Collect population anthropometric and dietary characteristics.
- Reduce blood pressure among university staff in a 6-week DASH diet intervention.
- Investigate whether any of the changes in baseline anthropometry (age, sex, Body Mass Index(BMI), waist-to-height ratio(WtHR)) or diet quality predicted change in systolic blood pressure.

## Methods

- Following ethical approval, anthropometric and blood pressure was measured in a convenience sample (n=111) of adults aged 24-67 years.
- Participants completed a baseline diet and lifestyle questionnaire and were given tailored advice based on food frequencies that were scored with a validated algorithm.
- At 6 weeks, 66 adults returned for repeat diet questionnaire, anthropometry and blood pressure
- Statistical analysis was conducted on baseline(n=111) and intervention(n=66) data using IBM SPSS Statistics Software(v. 28.0).

## Results

### Population characteristics of Baseline Cohort



### BP change after 6 weeks

Variables	SBP		DBP	
	Baseline	6 weeks	Baseline	6 weeks
Mean (mmHg)	133.0	126.2	87.9	83.8
SD (mmHg)	21.6	15.7	15.3	10.7
<b>Difference</b>	<b>-6.8</b>		<b>-4.1</b>	
P-value	<0.001		0.002	

Factors influencing SBP		Factors influencing ΔSBP	
Univariate		Univariate	
Sex	Age	Sex	BMI
BMI	WtHR	WtHR	ΔWtHR
Multivariate		Multivariate	
Sex	Age	Inconclusive	

## Discussion

- Over 75% of the cohort had non-ideal BMI, WtHR and Blood pressure levels, reflecting national cohort<sup>6</sup>.
- After 6 weeks there was a mean reduction of 6.8mmhg in SBP. A reduction of 5mmhg of SBP may reduce risk of cardiovascular events by 10%<sup>7</sup>.
- Age and sex remained predictors of SBP, highlighting the importance of directing hypertension interventions towards older and male populations.
- DASH Diet score increase coincided with SBP decrease but was not significantly associated with blood pressure in univariate or multivariate analysis.
- Workplace was a suitable setting for the Intervention.

## Conclusions

The majority of participants were overweight and had hypertension, reflecting the high risk for cardiovascular disease in the sample population.

A workplace intervention effectively reduced blood pressure levels over 6-weeks, showing statistical and clinical significance

Age, Sex, BMI, and WtHR were important factors in determining blood pressure levels, increasing DASH diet score coincided with reducing blood pressure levels.

## References

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